

Chiltons auto repair
manual

1980-1987

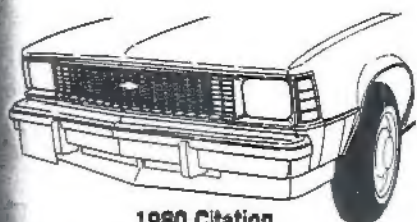
O-8019-7670-7

GM "A" & "X" Body

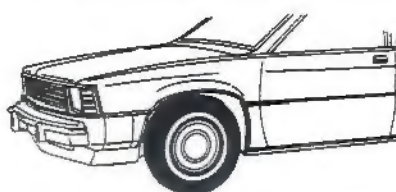
Celebrity, Century, Cutlass
Ciera, 6000, Citation, Omega,
Phoenix, Skylark



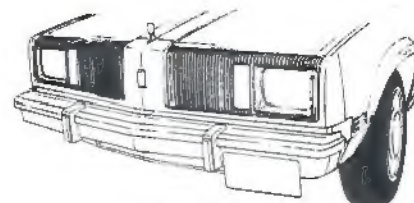
YEAR IDENTIFICATION



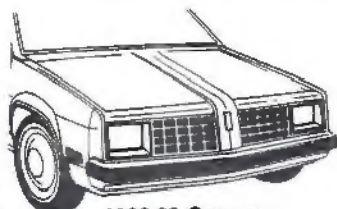
1980 Citation



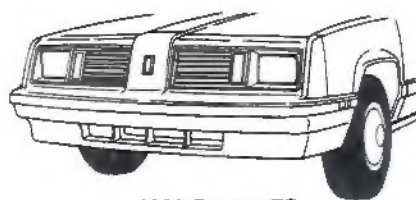
1981-85 Citation



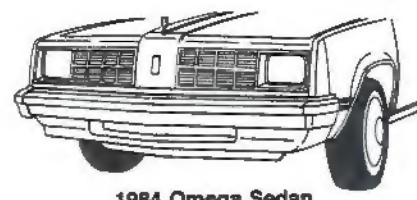
1980-81 Omega



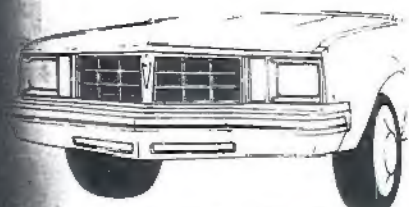
1982-83 Omega



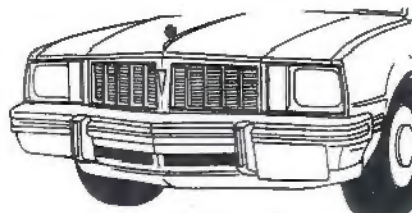
1984 Omega ES



1984 Omega Sedan



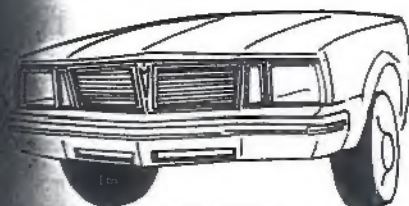
1980 Phoenix



1981 Phoenix



1982 Phoenix



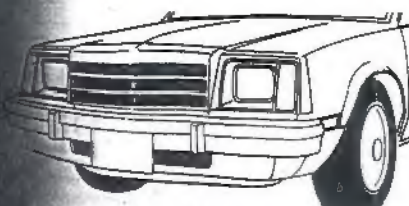
1983 Phoenix



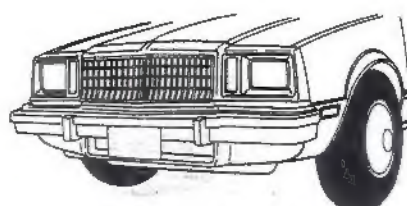
1984 Phoenix LE, SE



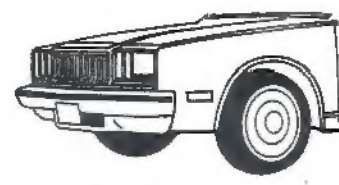
1980 Skylark



1981 Skylark



1984-85 Skylark T Type

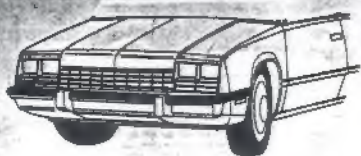


1981-85 Skylark Sport Coupe

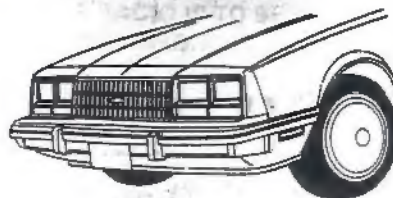


GM "A" & "X" BODY

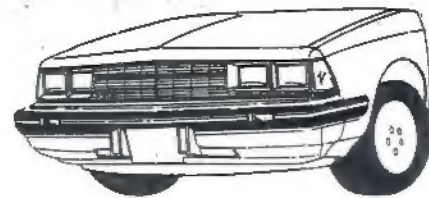
YEAR IDENTIFICATION



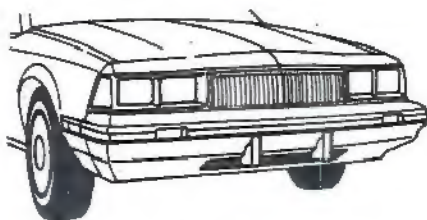
1982-83 Celebrity



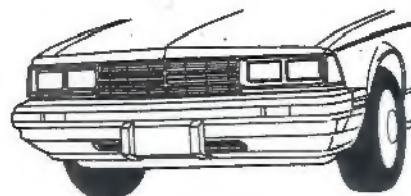
1984-85 Celebrity



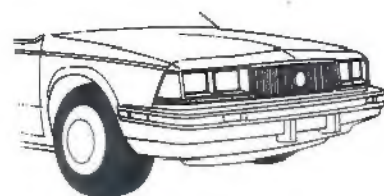
1982-83 Century



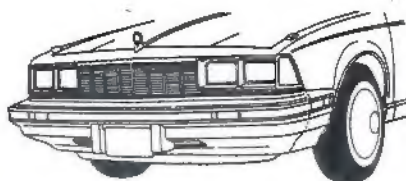
1984-85 Century



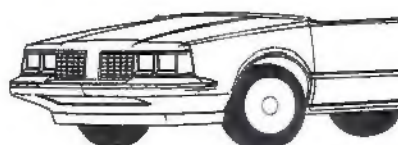
1984 Century T Type



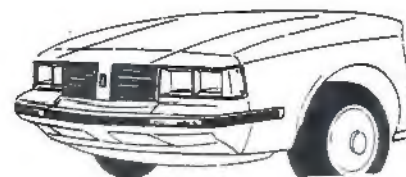
1985 Century T Type



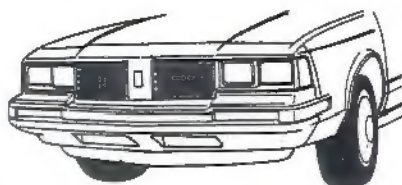
1984 Century Custom, Limited



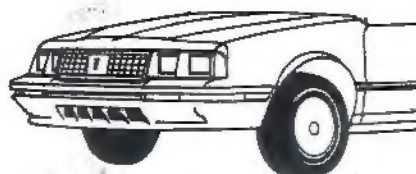
1982-83 Cutlass Clera



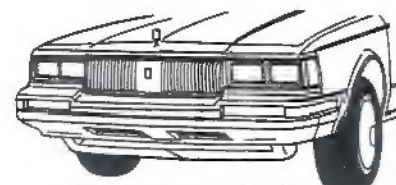
1983 Cutlass Clera ES



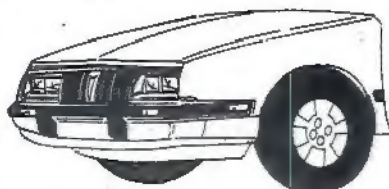
1984 Clera



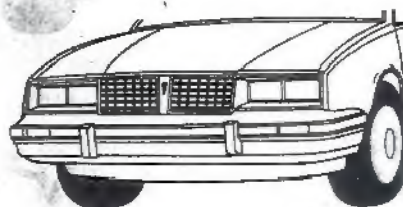
1985-86 Cutlass Clera



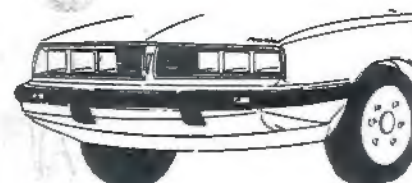
1984-86 Cutlass Cruiser



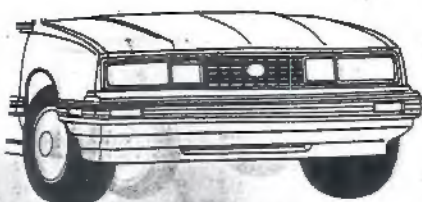
1982-83 6000



1984 6000, 6000 LE



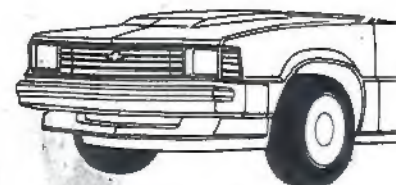
1983-85 6000 STE



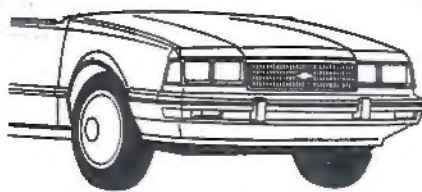
1986 6000 STE



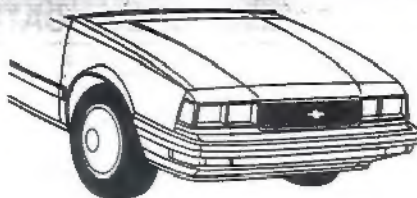
1985-86 6000, 6000 LE



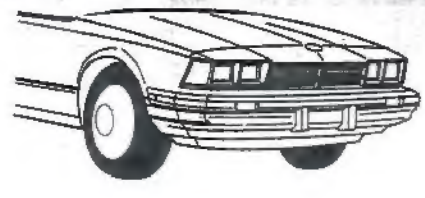
1982-85 Citation



1986-87 Celebrity



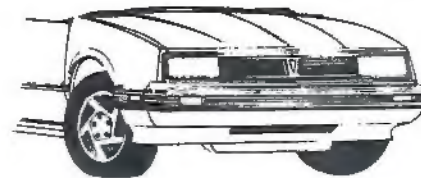
1985-87 Celebrity Eurosport



1986-87 Century



1987 Cutlass Clera GT



1987 Pontiac 6000 SE

VEHICLE IDENTIFICATION NUMBER (VIN)

It is important for servicing and ordering parts to be certain of the vehicle and engine identification. The VIN (vehicle identification number) is a 13 or 17 digit number visible through the windshield on the driver's side of the dash and contains the vehicle and engine identification codes. It can be interpreted as follows:

Engine Code					
Code	Cu. In.	Liters	Cyl.	Carb.	Eng. Mfg.
5	151	2.5	4	2	Pont.
7	173	2.8	V6	2	Chev.

Model Year Code	
Code	Year
A	1980

The thirteen digit Vehicle Identification Number can be used to determine engine application and model year. The 6th digit indicates the model year, and the 5th digit identifies the factory installed engine.

VEHICLE IDENTIFICATION NUMBER (VIN)

It is important for servicing and ordering parts to be certain of the vehicle and engine identification. The VIN (vehicle identification number) is a 13 or 17 digit number visible through the windshield on the driver's side of the dash and contains the vehicle and engine identification codes. It can be interpreted as follows:



Engine Code					
Code	Cu. In.	Liters	Cyl.	Carb.	Eng. Mfg.
5	151	2.5	4	2	Pont.
R	151	2.5	4	TBI	Pont.
X	173	2.8	V6	2	Chev.
Z	173(HO)	2.8	V6	2	Chev.
E	181	3.0	V6	2	Buick
3	231	3.8	V6	MFI	Buick
T	263	4.3	V6	Diesel	Olds
W	173	2.8	V6	MFI	Chev.
L	181	3.0	V6	MFI	Buick
B	231	3.8	V6	SFI	Buick

Model Year Code	
Code	Year
B	1981
C	1982
D	1983
E	1984
F	1985
G	1986
H	1987

The seventeen digit Vehicle Identification Number can be used to determine engine application and model year. The 10th digit indicates the model year and the 8th digit identifies the factory installed engine.

TBI: Throttle Body Injection
MFI: Multi-Point Fuel Injection



GM "A" & "X" BODY

GENERAL ENGINE SPECIFICATIONS

Year	VIN Code	Engine No. Cyl. Displ. (cu. in.)	Eng. Mfg.	Fuel Delivery System	Horsepower @ rpm	Torque ft. lb. @ rpm	Bore x Stroke	Compression Ratio	Oil Pressure @ 2000 rpm
1980-81	5	4-151	Pont.	2-bbl	90 @ 4000	135 @ 2400	4.000 x 3.000	8.2:1	37.5
	5	4-151 Calif.	Pont.	2-bbl	90 @ 4400	128 @ 2400	4.000 x 3.000	8.2:1	37.5
	X	6-173	Chev.	2-bbl	115 @ 4800	150 @ 2000	3.500 x 3.000	8.5:1	30-45
	X	6-173 Calif.	Chev.	2-bbl	110 @ 4800	140 @ 2000	3.500 x 3.000	8.5:1	30-45
	Z	6-173 HO	Chev.	2-bbl	135 @ 4800	165 @ 2400	3.500 x 3.000	8.9:1	30-45
1982	R	4-151	Pont.	TBI	90 @ 4000	134 @ 2400	4.000 x 3.000	8.2:1	37.5
	X	6-173	Chev.	2-bbl	112 @ 5100	148 @ 2400	3.500 x 3.000	8.42:1	30-45
	Z	6-173 HO	Chev.	2-bbl	135 @ 5400	142 @ 2400	3.500 x 3.000	8.94:1	30-45
1983	R	4-151	Pont.	TBI	92 @ 4000	134 @ 2800	4.000 x 3.000	8.2:1	37.5
	X	6-173	Chev.	2-bbl	112 @ 4800	145 @ 2100	3.500 x 3.000	8.5:1	50-65
	Z	6-173 HO	Chev.	2-bbl	135 @ 5400	145 @ 2400	3.500 x 3.000	8.9:1	①
	E	6-181	Buick	2-bbl	110 @ 4800	145 @ 2600	3.800 x 2.660	8.45:1	35-42
1984	R	4-151	Pont.	TBI	92 @ 4000	134 @ 2800	4.000 x 3.000	9.0:1	37.5
	X	6-173	Chev.	2-bbl	112 @ 4800	145 @ 2100	3.500 x 2.990	8.5:1	①
	Z	6-173 HO	Chev.	2-bbl	130 @ 5400	145 @ 2400	3.500 x 2.900	8.9:1	①
	E	6-181	Buick	2-bbl	110 @ 4800	145 @ 2600	3.800 x 2.660	8.45:1	35-42
1985	R	4-151	Pont.	TBI	92 @ 4400	134 @ 2800	4.000 x 3.000	9.0:1	37.5
	X	6-173	Chev.	2-bbl	112 @ 4800	145 @ 2100	3.500 x 2.990	8.5:1	50-65
	W	6-173	Chev.	MFI	130 @ 4800	155 @ 3600	3.500 x 2.990	8.9:1	50-65
	Z	6-173 HO	Chev.	MFI	125 @ 4500	165 @ 3600	3.500 x 2.990	8.9:1	50-65
	E	6-181	Buick	2-bbl	110 @ 4800	145 @ 2600	3.800 x 2.660	8.45:1	35-42
	3	6-231	Buick	MFI	125 @ 4400	195 @ 2000	3.800 x 3.400	8.0:1	35-42
1986-87	R	4-151	Pont.	TBI	92 @ 4400	134 @ 2800	4.000 x 3.000	9.0:1	37.5
	X	6-173	Chev.	2-bbl	112 @ 4800	145 @ 2100	3.500 x 2.990	8.0:1	①
	W	6-173	Chev.	MFI	125 @ 4800	160 @ 3600	3.500 x 2.990	8.5:1	①
	LE	6-181	Buick	MFI	125 @ 4900	150 @ 2400	3.800 x 2.660	8.45:1	②
	B3	6-231	Buick	SFI	125 @ 4400	195 @ 2000	3.800 x 3.400	8.0:1	②

① 50-65 psi @ 1200 rpm

② 37 psi @ 2400 rpm

DIESEL ENGINE SPECIFICATIONS

Year	VIN Code	Engine No. Cyl. Displ. (cu. in.)	Eng. Mfg.	Fuel Delivery System	Horsepower @ rpm	Torque ft. lb. @ rpm	Bore x Stroke	Compression Ratio	Oil Pressure @ 2000 rpm
1983-85	T	6-263	Olds.	Diesel	85 @ 3600	165 @ 1600	4.057 x 3.385	21.6:1	40-45

TUNE-UP SPECIFICATIONS

When analyzing compression test results, look for uniformity among cylinders rather than specific pressures.

Year	VIN Code	Eng. No. Cyl. Displ. (cu. in.)	Eng. Mfg.	hp	Spark Plugs		Ignition Timing (deg) ▲		Intake Valve Opens (deg) ■	Fuel Pump Pressure (psi)	Idle Speed (rpm) ▲	
					Orig. Type	Gap (in.)	Man. Trans.	Auto. Trans.			Man. Trans.	Auto. Trans.
'80	5	4-151	Pont.	90	R-43TSX	0.060	10B③	10B	33	6.5-8.0	1000	650
	X	6-173	Chev.	110	R-44TS	0.045	2B④	6B⑤	25	6.0-7.5	750⑥	750⑥
'81	5	4-151	Pont.	90	R-44TSX	0.060	4B	4B	33	6.5-8.0	1000	675
	X	6-173	Chev.	110	R-43TS	0.045	6B	10B	25	6.0-7.5	850	850⑦
	Z	6-173 HO	Chev.	135	R-42TS	0.045	10B	10B	31	6.0-7.5	700	700



GM "A" & "X" BODY

CAPACITIES A-Body

Year	VIN Code	Engine Displacement (cu. in.)	Eng. Mfg.	Crankcase (qts)		Transaxle Pints		Gas Tank (gals)	Cooling System (qts)	
				w/filter	wo/filter	Manual	Auto		w/heater	w/AC
'82-'85	R	4-151	Pont.	3.0	2.8	6.0	10.0	16.0	9.5	9.75
	X,W	6-173	Chev.	4.0	3.0	6.0	10.0	16.0	11.5	11.75
	E	6-181	Buick	4.0	3.0	—	10.0②	16.0	13.5	14.25
	3	6-231	Buick	4.0①	4.0	—	13.0	16.0	12.25	12.75
	T	6-263	Olds.	6.0	5.5	—	10.0②	16.0	13.25	13.75
'86-'87	R	4-151	Pont.	3.0	3.0	6.0	18	15.7	9.8	9.6
	X,W	6-173	Chev.	4.0	4.0	6.0	18	16.4	12.5	12.6
	L,E	6-181	Buick	4.0	4.0	6.0	18	16.0	14.4	14.0
	B,3	6-231	Buick	4.0	4.0	6.0	18	16.0	11.4	12.0
	T	6-263	Olds.	6.0	6.0	6.0	18	16.6	13.2	13.9

① Add as necessary to bring to appropriate level.

② 13.0 pts w/440T4 transaxle.

CAPACITIES X-Body

Year	VIN Code	Engine No. Cyl. Displacement (cu. in.)	Engine Crankcase Add 1 qt For New Filter	Transmission (Pts-to-Refill After Draining)		Drive Axle (pts)	Gasoline Tank (gals)	Cooling System (qts)	
				Manual	Automatic			w/Heater	w/AC
'80-'81	5,R	4-151	3	5.9	10.5	①	14	8.3	8.6
	7	6-173	4	5.9	10.5	①	14	10.2	10.6
'82	5,R	4-151	3	5.9	10.5	①	14	8.3	8.6
	X	6-173	4	5.9	10.5	①	14	10.6	10.8
'83-'85	5,R	4-151	3	5.9	10.5	①	14.6	8.3	8.6
	X	6-173	4	5.9	10.5	①	15.1	10.6	10.8
	Z,W	6-173 HO	4	5.9	10.5	①	15.5	10.6	10.8

① Transaxle refill given with transmission capacity

CRANKSHAFT AND CONNECTING ROD SPECIFICATIONS

All measurements are given in inches

Year	VIN Code	Engine No. Cyl. Displacement (cu. in.)	Eng. Mfg.	Crankshaft				Connecting Rod		
				Main Brg. Journal Diameter	Main Brg. Oil Clearance	Shaft End-Play	Thrust on No.	Journal Diameter	Oil Clearance	Side Clearance
'80-'87	R,5	4-151	Pont.	2.2995-	0.0005-	0.0035-	5	1.9995-	0.0005-	0.006-
				2.3005	0.0022	0.0085		2.0005	0.0026	0.022
	W,X,Z	6-173	Chev.	2.4937-	0.0017-	0.0020-②	3	1.9984-	0.0014-	0.006-
				2.4946	0.0030	0.0067③		1.9994	0.0036	0.017
	L,E	6-181	Buick	2.4990-	0.0003-	0.0030-	2	2.2487-	0.0005-	0.006-
				2.5000	0.0018	0.0090		2.2495	0.0026	0.023
	B,3	6-231	Buick	2.4995	0.0003-	0.003-	2	2.2487-	0.0005-	0.006-
					0.0018	0.011		2.2495	0.0026	0.023
	T	6-263	Olds.	2.9993-	①	0.0035-	4	2.2490-	0.0003-	0.008-
				3.0003		0.0135		2.2510	0.0025	0.021

① No. 1, 2, 3: 0.0005-0.0021

No. 4: 0.0020-0.0034

② 1980: 0.0026-0.0079

③ 1986-87: 0.0020-0.0033

VALVE SPECIFICATIONS

Year	VIN Code	Engine No. Cyl. Displacement (cu. in.)	Eng. Mfg.	Seat Angle (deg)	Face Angle (deg)	Spring Test Pressure (lbs. @ in.)	Spring Installed Height (in.)	Stem-to-Guide Clearance (in.)		Stem Diameter (in.)	
								Intake	Exhaust	Intake	Exhaust
'80-'85	R,5	4-151	Pont.	46	45	176 @ 1.254	1.660	0.0010-0.0027	0.0010-0.0027	0.3418-0.3425	0.3418-0.3425
	W,X,Z	6-173	Chev.	46	45	155 @ 1.160	1.610	0.0010-0.0027	0.0010-0.0027	0.3410-0.3416	0.3410-0.3416
	E	6-181	Buick	45	45	220 @ 1.340	1.727	0.0015-0.0035	0.0015-0.0032	0.3401-0.3412	0.3402-0.3415
	3	6-231	Buick	45	45	220 @ 1.340	1.727	0.0015-0.0035	0.0015-0.0032	0.3401-0.3412	0.3405-0.3412
	T	6-263	Olds.	①	②	210 @ 1.220	1.670	0.0010-0.0027	0.0015-0.0032	0.3425-0.3432	0.3420-0.3427
'86-'87	R	4-151	Pont.	46	45	170-180 @ 1.260	1.690	—	—	0.3420-0.3430	0.3420-0.3430
	W,X	6-173	Chev.	46	45	155 @ 1.160	1.610	0.0260-0.0268	0.0260-0.0268	—	—
	L,E	6-181	Buick	45	45	220 @ 1.340	1.727	0.0015-0.0032	0.0015-0.0032	0.3405-0.3412	0.3405-0.3412
	B,3	6-231	Buick	45	45	220 @ 1.340	1.727	0.0015-0.0032	0.3405-0.3412	0.3405-0.3412	—
	T	6-263	Olds.	①	②	210 @ 1.220	1.670	0.0010-0.0027	0.0015-0.0027	0.3425-0.3432	0.3420-0.3427

- ① Intake: 45
Exhaust: 32
② Intake: 44
Exhaust: 30

CAMSHAFT SPECIFICATIONS

All measurements are given in inches

Year	VIN Code	Engine	Eng. Mfg.	Journal Diameter					Bearing Clearance	Lobe Lift		Camshaft End Play
				1	2	3	4	5		Intake	Exhaust	
'80-'85	R,5	4-151	Pont.	1.869	1.869	1.869	—	—	0.0007-0.0027	0.398	0.398	0.0015-0.0050
	W,X,Z	6-173	Chev.	1.869	1.869	1.869	1.869	—	0.0010-0.0040	0.231	0.263	—
	E	6-181	Buick	1.786	1.786	1.786	1.786	1.786	①	0.406	0.406	—
	3	6-231	Buick	1.786	1.786	1.786	1.786	1.786	①	N.A.	N.A.	—
	T	6-263	Olds.	②	2.205	2.185	2.165	—	0.0020-0.0059	N.A.	N.A.	0.0008-0.0228
'86-'87	R	4-151	Pont.	1.869	1.869	1.869	—	—	0.0007-0.0027	0.398	0.398	0.0015-0.0050
	W	6-173	Chev.	1.8678	1.8678	1.8678	1.8678	—	.001-.004	.2626	.2732	—
	X	6-173	Chev.	1.8678	1.8678	1.8678	—	.001-.004	.231	.2626	—	—
	L,E	6-181	Buick	1.786	1.786	1.786	1.786	①	.358	.384	—	—
	B	6-231	Buick	1.786	1.786	1.786	1.786	①	.392	.392	—	—
	T	6-263	Olds.	②	2.205	2.185	2.165	—	0.0020-0.0059	N.A.	N.A.	0.0008-0.0228
	3	6-231	Buick	1.786	1.786	1.786	1.786	①	.368	.384	—	—

- ① No. 1: 0.0005-0.0025
No. 2-5: 0.0005-0.0035
② No. 1 bearing is not borable, but must be replaced separately.
N.A. Not available.



GM "A" & "X" BODY

PISTON AND RING SPECIFICATIONS

All measurements are given in inches.

Year	VIN Code	Engine Type/Disp. (cu. in.)	Eng. Mfg.	Piston-to-Bore Clearance	Ring Gap			Ring Side Clearance		
					Top Compression	Bottom Compression	Oil Control	Top Compression	Bottom Compression	Oil Control
'80-'85	R,5	4-151	Pont.	0.0025-0.0033	0.010-①	0.020-②	0.015-0.055	0.0015-0.0030	0.0015-0.0030	snug
	W,X,Z	6-173	Chev.	0.0017-0.0027	0.0098-0.0197	0.0098-0.0197	0.020-③	0.0012-④	0.0016-④	0.008 max.
	L,E	6-181	Buick	0.0008-0.0020	0.013-0.023	0.013-0.023	0.015-0.035	0.0030-0.0050	0.0030-0.0050	0.0035 max.
	B,3	6-231	Buick	0.0008-0.0020	0.010-0.020	0.010-0.020	0.015-0.055	0.0030-0.0050	0.0030-0.0050	0.0035 max.
	T	6-263	Olds.	0.0030-0.0040	0.015-0.025	0.015-0.025	0.015-0.055	0.0050-0.0070	0.0030-0.0070	0.001-0.005
'86-'87	R	4-151	Pont.	0.0014-0.0022	0.010-0.020	0.010-0.020	0.020-0.060	0.002-0.003	0.001-0.003	0.015-0.055
	W	6-173	Chev.	0.001-0.002	0.0012-0.0027	0.0016-0.0037	0.020-0.055	0.0098-0.0197	0.0098-0.0197	0.020-0.055
	L,E	6-181	Buick	0.0008-0.0020	0.010-0.020	0.010-0.020	0.015-0.055	0.0030-0.0050	0.0030-0.0050	0.0035 max.
	B,3	6-231	Buick	0.0008-0.0020	0.010-0.020	0.010-0.020	0.015-0.055	0.0030-0.0050	0.0030-0.0050	0.0035 max.
	X	6-173	Chev.	0.0007-0.0017	0.0012-0.0027	0.0016-0.0037	0.020-0.055	0.0098-0.0197	0.0098-0.0197	0.020-0.055

① 1980: 0.015-0.025

② 1980: 0.015-0.055

③ 1980: 0.009-0.019

④ 1980: 0.012-0.032

TORQUE SPECIFICATIONS

All readings in ft. lbs.

Year	VIN Code	Engine No. Cyl. Displacement (cu. in.)	Eng. Mfg.	Cylinder Head Bolts	Rod Bearing Bolts	Main Bearing Bolts	Crankshaft Bolt	Flywheel-to-Crankshaft Bolts	Manifold	
									Intake	Exhaust
'80-'87	R,5	4-151	Pont.	85③	32	70	200	44④	29	44
	W,X,Z	6-173	Chev.	70⑤	37	68	75	50	23	25
	L,E	6-181	Buick	80	40-45	100	225	60	32	25-37
	B,3	6-231	Buick	80	40-45	100	225	60	32	25-37
	T	6-263	Olds.	①	42	107	255②	76	41	29

① All exc. No. 5, 6, 11, 12, 13, 14: 142

No. 5, 6, 11, 12, 13, 14: 59

② Range: 160-350 ft. lb.

③ 1980-81: 75

1984-87: 92

④ 1986-87: 55

⑤ 1986-87: 65-90

WHEEL ALIGNMENT SPECIFICATIONS

Year	Model	Caster*		Camber		Toe-In (in.)	Steering Axis (deg) Inclination
		Range (deg)	Pref. Setting (deg)	Range (deg)	Pref. Setting (deg)		
'80-'81	All	2N-2P	0	0-1P	½P	0-¾	14.5
'82-'87	All	0-4P	2P	½N-½P	0	1¾-1¾	14.5

* Caster is not adjustable

TUNE-UP SPECIFICATIONS

When analyzing compression test results, look for uniformity among cylinders rather than specific pressures.

Year	VIN Code	Eng. No. Cyl. Displ. (cu. in.)	Eng. Mfg.	hp	Spark Plugs		Ignition Timing (deg) ▲		Intake Valve Opens (deg)■	Fuel Pump Pressure (psi)	Idle Speed (rpm) ▲	
					Orig. Type	Gap (in.)	Man. Trans.	Auto. Trans.			Man. Trans.	Auto. Trans.
'82-'84	5,R	4-151	Pont.	90	R-44TSX	0.060	8B	8B	33	6.0-8.0	950①	750②
	X	6-173	Chev.	112	R-43CTS	0.045	10B	10B	25	6.0-7.5	800	600
	Z,W	6-173 HO	Chev.	135⑩	R-42CTS	0.045	6B	10B	31	6.0-7.5	850⑩	750
	E	6-181	Buick	110	R-44TS8	0.080	—	15B	16	6.0-8.0	—	see text
	3	6-231	Buick	125	R-44TS8	0.080	⑨	⑨	4.0-6.5	⑨	⑨	—
	T	6-263	Olds.	85	—	—	—	6A	N.A.	5.8-8.7	—	650
'85-'86	5	4-151	Pont.	92	R-43TXS	0.045	⑨	⑨	33	6.0-7.0	⑨	⑨
	R	4-151	Pont.	92	R-43TXS	0.60	⑨	⑨	33	12.0	⑨	⑨
	X	6-173	Chev.	112	R-43CTS	.045	⑨	⑨	25	6.0-7.5	⑨	⑨
	Z	6-173 HO	Chev.	—	R-42CTS	.045	⑨	⑨	—	—	⑨	⑨
	W	6-173	Chev.	125	R-42CTS	.045	⑨	⑨	—	24.0-37.0	⑨	⑨
	B,3	6-231	Buick	125	R-44TS8	.080	⑨	⑨	—	—	⑨	⑨
	T	6-263	Diesel Olds	—	—	—	⑨	⑨	—	5.5-6.5	⑨	⑨
	L,E	6-181	Buick	110	R-44TS	.060	⑨	⑨	—	3.9-6.5	⑨	⑨

'87

See Underhood Specifications Sticker

NOTE: The underhood specifications sticker often reflects tune-up specification changes made in production. Sticker figures must be used if they disagree with those in this chart.

▲ See text for procedure

■ All figures Before Top Dead Center

B: Before Top Dead Center

A: After Top Dead Center

Part numbers in this chart are not recommendations by Chilton for any product by brand name.

N.A.: Information not available

① Without air conditioning: 850

② Without air conditioning: 680

③ Calif.: 12B

④ Calif.: 6B

⑤ Calif.: 10B

⑥ Calif.: 700

⑦ With A/C: 900

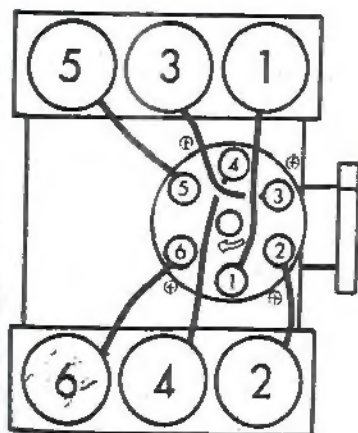
⑧ Calif.: 750

⑨ See underhood specifications sticker

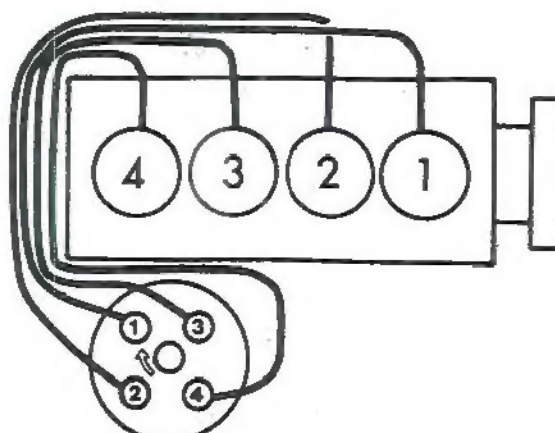
⑩ 130 on code W engine, 1982-84 only

FIRING ORDERS

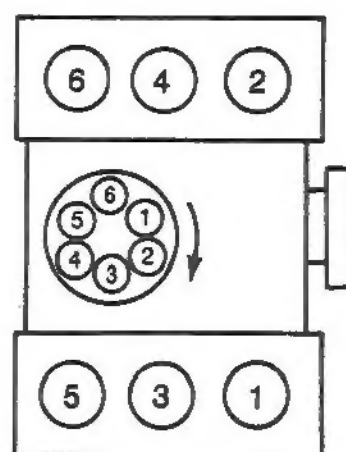
NOTE: To avoid confusion, always replace sparkplug wires one at a time.



GM (Buick) 181 V6 (3.0L)
GM (Buick) 231 V6 (3.8 L)
Engine firing order: 1-6-5-4-3-2
Distributor rotation: clockwise



GM (Pontiac) 151-4
Engine firing order: 1-3-4-2
Distributor rotation: clockwise

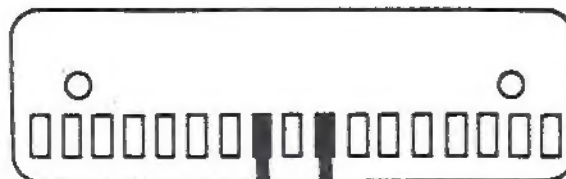


GM (Chevrolet) 173 V6 (2.8 L)
Engine firing order: 1-2-3-4-5-6
Distributor rotation: clockwise



VEHICLE IDENTIFICATION NUMBER (VIN)

It is important for servicing and ordering parts to be certain of the vehicle and engine identification. The VIN (vehicle identification number) is a 13 or 17 digit number visible through the windshield on the driver's side of the dash and contains the vehicle and engine identification codes. It can be interpreted as follows:



Engine Code					
Code	Cu. In.	Liters	Cyl.	Carb.	Eng. Mfg.
CAMARO					
2	151	2.5	4	TBI	Pont.
F③	151	2.5	4	2	Pont.
1	173	2.8	V6	2	Chev.
L	173	2.8	V6	2	Chev.
S②	173	2.8	6	MFI	Chev.
K	229	3.8	6	2	Chev.
A	231	3.8	V6	2	Buick
J	267	4.4	8	2	Chev.
H	305	5.0	8	4	Chev.
7③	305	5.0	8	TBI	Chev.
G	305	5.0	8	4	Chev.
S③	305	5.0	8	TBI	Chev.
F②	305	5.0	8	TPI	Chev.
L④	350	5.7	8	4	Chev.
8	350	5.7	8	TPI	Chev.

FIREBIRD					
2	151	2.5	4	TBI	Pont.
F③	151	2.5	4	2	Pont.
1	173	2.8	V6	2	Chev.
L	173	2.8	V6	2	Chev.
S②	173	2.8	6	MFI	Chev.
A	231	3.8	V6	2	Buick
S④	265	4.3	8	2	Pont.
W	301	4.9	8	4	Pont.
T	301①	4.9	8	4	Pont.
H	305	5.0	8	4	Chev.
7③	305	5.0	8	TBI	Chev.
G	305	5.0	8	4	Chev.
F②	305	5.0	8	TPI	Chev.

Model Year Code	
Code	Year
B	1981
C	1982
D	1983
E	1984
F	1985
G	1986
H	1987

The seventeen digit Vehicle Identification Number can be used to determine engine application and model year. The 10th digit indicates the model year, and the 8th digit identifies the factory installed engine.

- ① Turbocharged engine
- ② 1985 and later
- ③ 1982-83
- ④ 1981 only
- TBI—Throttle body (fuel) injection
- TPI—Tuned Port Injection
- MFI—Multi-Port Fuel Injection



GM "F" BODY

GENERAL ENGINE SPECIFICATIONS

Camaro

Year	Engine VIN Code	Engine No. of Cyl. Displacement (cu. in.)	Engine Manufacturer	Fuel Delivery	Horsepower @ rpm ^①	Torque @ rpm (ft. lbs.) ^①	Bore x Stroke (in.)	Compression Ratio	Oil Pressure @ 2000 rpm
'80	K	6-229	Chev.	2 bbl.	115 @ 4000	175 @ 2000	3.736 x 3.480	8.6:1	45
	A	6-231	Buick	2 bbl.	110 @ 3800	190 @ 1600	3.800 x 3.400	8.0:1	45
	J	8-267	Chev.	2 bbl.	120 @ 3600	215 @ 2000	3.500 x 3.480	8.3:1	45
	H	8-305	Chev.	4 bbl.	155 @ 4000	240 @ 1600	3.736 x 3.480	8.6:1	45
	H	8-305 Calif.	Chev.	4 bbl.	155 @ 4000	230 @ 2400	3.736 x 3.480	8.6:1	45
	H	8-305/Z28	Chev.	4 bbl.	165 @ 4000	245 @ 2400	3.736 x 3.480	8.6:1	45
	L	8-350	Chev.	4 bbl.	190 @ 4200	280 @ 2400	4.000 x 3.480	8.2:1	45
'81	K	6-229	Chev.	2 bbl.	110 @ 4200	170 @ 2000	3.736 x 3.480	8.6:1	45
	A	6-231	Buick	2 bbl.	110 @ 3800	190 @ 1600	3.800 x 3.400	8.0:1	45
	J	8-267	Chev.	2 bbl.	115 @ 4000	200 @ 2400	3.500 x 3.480	8.3:1	45
	H	8-305	Chev.	4 bbl.	150 @ 3800	240 @ 2400	3.736 x 3.480	8.6:1	45
	H	8-305/Z28	Chev.	4 bbl.	165 @ 4000	245 @ 2400	3.736 x 3.480	8.6:1	45
	L	8-350	Chev.	4 bbl.	175 @ 4000	275 @ 2400	4.000 x 3.480	8.2:1	45
'82	2	4-151	Pont.	TBI	90 @ 4000	134 @ 2400	4.000 x 3.000	8.2:1	36-4
	1	6-173	Chev.	2 bbl.	102 @ 4800	145 @ 2400	3.503 x 2.992	8.5:1	40
	H	8-305	Chev.	4 bbl.	145 @ 4000	240 @ 2400	3.736 x 3.480	8.6:1	40
	7	8-305	Chev.	TBI	165 @ 4200	240 @ 2400	3.736 x 3.480	9.5:1	40
'83	2	4-151	Pont.	TBI	92 @ 4000	134 @ 2400	4.000 x 3.000	8.2:1	36-4
	1	6-173	Chev.	2 bbl.	102 @ 4800	145 @ 2400	3.503 x 2.992	8.5:1	40
	H	8-305	Chev.	4 bbl.	145 @ 4000	240 @ 2400	3.736 x 3.480	8.6:1	40
	S	8-305	Chev.	TBI	175 @ 4200	250 @ 2800	3.736 x 3.480	9.5:1	50-6
'84	2	4-151	Pont.	TBI	90 @ 4000	134 @ 2400	4.000 x 3.000	8.2:1	36-4
	1	6-173	Chev.	2 bbl.	102 @ 4800	145 @ 2400	3.503 x 2.992	8.5:1	40
	H	8-305	Chev.	4 bbl.	145 @ 4000	240 @ 2400	3.736 x 3.480	8.6:1	40
	G	8-305	Chev.	4 bbl.	190 @ 4800	240 @ 3200	3.736 x 3.480	9.5:1	40
'85-'87	2	4-151	Pont.	TBI	90 @ 4000	134 @ 2400	4.000 x 3.000	9.0:1	36-4
	F	8-305	Chev.	TPI	265 @ 4400	275 @ 3200	3.736 x 3.480	9.5:1	40
	S	6-173	Chev.	MFI	135 @ 5100	165 @ 3600	3.503 x 2.992	8.9:1	40
	H	8-305	Chev.	4 bbl.	155 @ 4200	245 @ 2000	3.736 x 3.480	9.5:1	40
	G	8-305	Chev.	4 bbl.	190 @ 4800	240 @ 3200	3.736 x 3.480	9.5:1	40
	8	8-350	Chev.	TPI	230 @ 4000	330 @ 3200	4.000 x 3.480	9.5:1	50-6

① Horsepower and torque are SAE net figures. They are measured at the rear of the transmission with all accessories installed and operating. Since the figures vary when a given engine is installed in different models, some are representative, rather than exact.

GENERAL ENGINE SPECIFICATIONS

Firebird

Year	Engine VIN Code	Engine No. of Cyl. Displacement (cu. in.)	Engine Manufacturer	Fuel Delivery	Horsepower @ rpm ^①	Torque @ rpm (ft. lbs.) ^①	Bore x Stroke (in.)	Compression Ratio	Oil Pressure @ 2050 rpm
'80	A	6-231	Buick	2 bbl.	115 @ 3800	188 @ 2000	3.800 x 3.400	8.0:1	37
	S	8-265	Pont.	2 bbl.	120 @ 3600	210 @ 1600	3.750 x 3.000	8.3:1	37③
	W	8-301	Pont.	4 bbl.	150 @ 4000	240 @ 2000	4.000 x 3.000	8.1:1	38③
	H	8-305	Chev.	4 bbl.	150 @ 3800	230 @ 2400	3.736 x 3.480	8.4:1	40



GENERAL ENGINE SPECIFICATIONS

Firebird

Year	Engine VIN Code	Engine No. of Cyl. Displacement (cu. in.)	Engine Manufacturer	Fuel Delivery	Horsepower (at rpm) ①	Torque (ft. lbs.) ①	Bore x Stroke (in.)	Compression Ratio	Oil Pressure (at 2050 rpm)
'81	A	6-231	Buick	2 bbl.	115 @ 3800	190 @ 1600	3.800 x 3.400	8.0:1	37
	S	8-265	Pont.	2 bbl.	119 @ 4000	205 @ 2000	3.750 x 3.000	8.3:1	38 ③
	W	8-301	Pont.	4 bbl.	155 @ 4000	245 @ 2000	4.000 x 3.000	8.1:1	38 ③
	T	8-301 ②	Pont.	4 bbl.	210 @ 4000	340 @ 2000	4.000 x 3.000	7.5:1	58 ③
	H	8-305	Chev.	4 bbl.	155 @ 3800	240 @ 2400	3.736 x 3.480	8.6:1	40
'82	2	4-151	Pont.	TBI	90 @ 4000	134 @ 2400	4.000 x 3.000	8.2:1	36-41
	1	6-173	Chev.	2 bbl.	102 @ 4800	145 @ 2400	3.503 x 2.992	8.5:1	40
	H	8-305	Chev.	4 bbl.	145 @ 4000	240 @ 2400	3.736 x 3.480	8.6:1	40
	7	8-305	Chev.	TBI	175 @ 4200	240 @ 2400	3.736 x 3.480	9.5:1	40
'83	2	4-151	Pont.	TBI	90 @ 4000	134 @ 2400	4.000 x 3.000	8.2:1	36-41
	1	6-173	Chev.	2 bbl.	102 @ 4800	145 @ 2400	3.503 x 2.992	8.5:1	40
	L	6-173	Chev.	2 bbl.	125 @ 5400	145 @ 2400	3.503 x 2.992	8.9:1	50-65
	H	8-305	Chev.	4 bbl.	145 @ 4000	240 @ 2400	3.736 x 3.480	8.6:1	40
	S	8-305	Chev.	TBI	175 @ 4200	250 @ 2800	3.736 x 3.480	9.5:1	50-65
'84	2	4-151	Pont.	TBI	90 @ 4000	134 @ 2400	4.000 x 3.000	8.2:1	36-41
	1	6-173	Chev.	2 bbl.	102 @ 4800	145 @ 2400	3.503 x 2.992	8.5:1	40
	L	6-173HO	Chev.	2 bbl.	125 @ 5400	145 @ 2400	3.503 x 2.992	8.9:1	50-65
	H	8-305	Chev.	4 bbl.	145 @ 4000	240 @ 2400	3.736 x 3.480	8.6:1	40
	G	8-305	Chev.	4 bbl.	190 @ 4800	240 @ 3200	3.736 x 3.480	9.5:1	40
'85-'87	2	4-151	Pont.	TBI	90 @ 4000	134 @ 2400	4.000 x 3.000	8.2:1	36-41
	S	6-173	Chev.	MFI	135 @ 5100	165 @ 3600	3.503 x 2.992	8.9:1	40
	H	8-305	Chev.	4 bbl.	155 @ 4200	245 @ 2000	3.736 x 3.480	8.6:1	40
	G	8-305	Chev.	4 bbl.	180 @ 4800	240 @ 3200	3.736 x 3.480	9.5:1	40
	F	8-305	Chev.	TPI	215 @ 4400	275 @ 3200	3.736 x 3.480	9.5:1	50-65

TBI—Throttle Body Injection

MFI—Multi-Port Fuel Injection

TPI—Tuned Port Injection

① Horsepower and torque are SAE net figures.

They are measured at the rear of the transmission with all accessories installed and operating. Since the figures vary when a given engine is installed in different models, some are representative, rather than exact.

② Turbo charged engine

③ Oil pressure above 2600 rpm

TUNE-UP SPECIFICATIONS

Camaro

Year	Engine VIN Code	Engine No. of Cyl. Displacement (cu. in.)	Engine Manufacturer	Spark Plugs		Ignition Timing (deg) ① ②		Intake Valve Opens (deg) ③	Fuel Pump Pressure (psi)	Idle Speed (rpm) ① ②	
				Type	Gap (in.)	Man. Trans.	Auto. Trans.			Man. Trans.	Auto. Trans.
'80	K	6-229	Chev.	R-45TS ⑥	0.045	8B	12B	42	4½-6	700	600
	A	6-231	Buick	R-45TSX	0.060	—	15B	16	4¼-5¾	—	600
	J	8-267	Chev.	R-45TS	0.045	—	4B	28	7½-9	—	500
	H	8-305	Chev.	R-45TS	0.045	4B	4B	28	7½-9	700	500(550)
	L	8-350	Chev.	R-45TS	0.045	6B	6B	28	7½-9	700	500
'81	K	6-229	Chev.	R-45TS	0.045	6B	6B	42	4½-6	700 ⑥	600 ⑥
	A	6-231	Buick	R-45TS8	0.080	—	15B	16	4¼-5¾	—	500 ⑥
	J	8-267	Chev.	R-45TS	0.045	—	6B	44	7½-9	—	500 ⑥
	H	8-305	Chev.	R-45TS	0.045	6B	6B	44	7½-9	700	500
	L	8-350	Chev.	R-45TS	0.045	—	6B	38	7½-9	—	500 ⑥



TUNE-UP SPECIFICATIONS

Firebird

Year	Engine VIN Code	Engine No. of Cyl. Displacement (cu. in.)	Engine Manufacturer	Spark Plugs		Ignition Timing (deg) ③ ④		Intake Valve Opens (deg) ⑤	Fuel Pump Pressure (psi)	Idle Speed (rpm) ③ ④	
				Type	Gap (in.)	Man. Trans.	Auto. Trans.			Man. Trans.	Auto. Trans.
'82	2	4-151	Pont.	R-44TSX	0.060	③	③	—	9-13	③	③
	1	6-173	Chev.	R-43TS	0.045	③	③	—	5.5-6.5	③	③
	H	8-305	Chev.	R-45TS	0.045	③	③	—	5.5-6.5	③	③
	7	8-305	Chev.	R-45TS②	0.045	③	③	—	9-13	③	③
'83	2	4-151	Pont.	R-44TSX	0.060	③	③	—	9-13	③	③
	1	6-173	Chev.	R-43CTS	0.045	③	③	—	5.5-6.5	③	③
	L	6-173HO	Chev.	R-42CTS	0.045	③	③	—	6-7½	③	③
	H	8-305	Chev.	R-45TS	0.045	③	③	—	5.5-6.5	③	③
	S	8-305	Chev.	R-45TS	0.045	③	③	—	9-13	③	③
'84	2	4-151	Pont.	R-44TSX	0.060	③	③	—	9-13	③	③
	1	6-173	Chev.	R-43CTS	0.045	③	③	—	5½-6½	③	③
	L	6-173	Chev.	R-42CTS	0.045	③	③	—	6-7½	③	③
	H	8-305	Chev.	R-45TS	0.045	③	③	NA	5½-6½	③	③
	G	8-305	Chev.	R-45TS	0.045	③	③	—	9-13	③	③
'85	2	4-151	Pont.	R-43TSX	0.060	③	③	—	9-13	③	③
	S	6-173	Chev.	R-42CTS	0.045	③	③	—	40.5-47	③	③
	F	8-305	Chev.	R-43CTS	0.045	③	③	—	40.5-47	③	③
	H	8-305	Chev.	R-45TS	0.045	③	③	—	5½-6½	③	③
	G	8-305	Chev.	R-44TS	0.045	③	③	—	9-13	③	③
'86	2	4-151	Pont.	R-43CTS6	0.060	③	③	—	9-13	③	③
	S	6-173	Chev.	R-42CTS	0.045	③	③	—	40½-47	③	③
	F	8-305	Chev.	R-43TS	0.035	③	③	—	40½-47	③	③
	H	8-305	Chev.	R-45TS	0.045	③	③	—	5½-6½	③	③
	G	8-305	Chev.	R-43TS	0.035	③	③	—	9-13	③	③
'87	All	See Underhood Specifications Sticker									

NOTE: The underhood specifications sticker often reflects tune-up specification changes made during the production run. Sticker figures must always be used if they disagree with those in this chart. Part numbers in this chart are not recommendations by Chilton for any product by brand name.

All models use electronic ignition systems.

B Before Top Dead Center

TDC Top Dead Center

— Not applicable

NA—Not available

① Lower figure indicates idle speed with solenoid disconnected

② R-44TS if a colder plug is needed

③ See text for procedure

④ Figure in parentheses indicates California engine

⑤ All figures are in degrees Before Top Dead Center. Where two figures appear, the first represents timing with manual transmission, the second with automatic transmission
Auto—29
Trans Am—16

⑥ All M/T and low altitude A/T—R-45TS, gap 0.040

⑦ With performance package

⑧ Turbocharged engine

⑨ These functions are controlled by the emissions computer. In rare instances when adjustment is necessary, refer to the underhood emissions sticker for specifications.



GM "F" BODY

CAPACITIES Firebird

Year	Engine VIN Code	Engine No. Cyl. Displacement (cu. in.)	Engine Crankcase (Add 1 Qt For New Filter)	Transmission (Pts-to-Refill After Draining)			Drive Axle (pts)	Gasoline Tank (gals)	Cooling System (qts)	
				Manual		Automatic (Pts.)①			With Heater	With A/C
				3 Spd.	4 Spd.					
'82	2	4-151	3②	—	4.3	8.5	3.5	16.0	12.8	13.0
	1	6-173	4②	—	4.3	8.5	3.5	16.0	12.8	12.8
	H	8-305	4	—	4.3	8.5	3.5	16.0	17.2	17.2
	7	8-305	4	—	4.3	8.5	3.5	16.0	15.9	15.9
'83	2	4-151	3②	—	4.3③	8.5④	3.5	16.0	12.8	13.0
	1,L	6-173	4②	—	4.3③	8.5④	3.5	16.0	12.8	12.8
	H	8-305	4	—	4.3③	8.5④	3.5	16.0	17.2	17.2
	S	8-305	4	—	4.3③	8.5④	3.5	16.0	15.9	15.9
'84	2	4-151	3②	—	3.5③	8.5④	3.5	16.0	8.8	9.1
	1,L	6-173	4②	—	3.5③	8.5④	3.5	16.0	12.5	12.5
	H	8-305	4	—	3.5③	8.5④	3.5	16.0	15.0	15.0
	G	8-305	4	—	3.5③	8.5④	3.5	16.0	15.0	15.0
'85-'87	2	4-151	3②	—	2.5③	9.5④	3.5	15.5	13.0	12.4
	S	6-173	4②	—	2.5③	9.5④	3.5	15.5	12.5	12.5
	H	8-305	4	—	2.5③	9.5④	3.5	16.0	17.2	17.2
	G	8-305	4	—	2.5③	9.5④	3.5	16.0	17.2	17.2
	F	8-305	4	—	2.5③	9.5④	3.5	15.5	17.0	16.9

—Not applicable

① Drain and refill only—does not include torque converter

② Capacity same with or without filter change

③ 5-speed—6.87 pints

④ Overdrive transmission—9.9 pints. Add 4 pints, run engine and check dipstick-fill as necessary

VALVE SPECIFICATIONS Camaro

Year	Engine VIN Code	Engine No. Cyl. Displacement (cu. in.)	Seat Angle (deg)	Face Angle (deg)	Spring Test Pressure (lbs. @ in.)	Spring Installed Height (in.)	Stem-to-Guide Clearance (in.)		Stem Diameter (in.)	
							Intake	Exhaust	Intake	Exhaust
'80-'81	K	6-229	46	45	200 @ 1.25	1 ²³ / ₃₂	.0010-.0027	.0010-.0027	.3414	.3414
	A	6-231	45	45	168 @ 1.33	1 ⁴⁷ / ₆₄	.0015-.0032	.0015-.0032	.3407	.3409
	J	8-267	46	45	200 @ 1.25	1 ²³ / ₃₂	.0010-.0027	.0010-.0027	.3414	.3414
	H	8-305	46	45	200 @ 1.25	1 ²³ / ₃₂	.0010-.0027	.0010-.0027	.3414	.3414
	L	8-350	46	45	200 @ 1.25	1 ²³ / ₃₂	.0010-.0027	.0010-.0027	.3414	.3414
'82-'84	2	4-151	46	45	122-180 @ 1.25	1.69	.0010-.0027	.0010-.0027 ^①	.3418-.3425	.3418-.3425
	1	6-173	46	45	194 @ 1.18	1.57	.0010-.0026	.0010-.0026	.3410-.3420	.3410-.3420
	H,7, S,G	8-305	46	45	194-206 @ 1.25	1 ²³ / ₃₂	.0010-.0027	.0010-.0027	.3410-.3420	.3410-.3420
	2	4-151	46	45	170-180 @ 1.25	1.69	.0010-.0027	.0010-.0027 ^①	.3420-.3430	.3420-.3430
'85-'87	S	6-173	46	45	194 @ 1.18	1.57	.0010-.0026	.0010-.0026	.3410-.3420	.3410-.3420
	F,G,H	8-305	46	45	194-206 @ 1.25	1 ²³ / ₃₂	.0010-.0027	.0010-.0027	.3410-.3420	.3410-.3420
	8	8-350	46	45	194-206 @ 1.25	1 ²³ / ₃₂	.0010-.0027	.0010-.0027	.3410-.3420	.3410-.3420

① Figure given is measured at the top of the guide; .0020-.0037 is measured at the bottom of the guide.

VALVE SPECIFICATIONS

Firebird

Year	Engine VIN Code	Engine No. Cyl. Displacement (cu. in.)	Seat Angle (deg)	Face Angle (deg)	Spring Test Pressure (lbs. @ in.)	Spring Installed Height (in.)	Stem-to-Guide Clearance (in.)		Stem Diameter (in.)	
							Intake	Exhaust	Intake	Exhaust
	A	6-231	45	45	182 @ 1.34	1 ⁴⁷ / ₆₄	.0015-.0032	.0015-.0032	.3402-.3412	.3405-.3412
	S	8-265	46	45	175 @ 1.29	1 ⁴³ / ₆₄	.0010-.0027	.0010-.0027②	.3425	.3425
	W	8-301	46	45	175 @ 1.29	1 ⁴³ / ₆₄	.0010-.0027	.0010-.0027②	.3425	.3425
	H	8-305	46	45	199 @ 1.25	1 ²³ / ₃₂	.0010-.0037	.0010-.0047	.3414	.3414
	A	6-231	45	44	182 @ 1.34	1 ⁴⁷ / ₆₄	.0015-.0035	.0015-.0032	.3401-.3412	.3405-.3412
	S	8-265	46	45	175 @ 1.29	1 ⁴³ / ₆₄	.0010-.0027	.0010-.0027②	.3425	.3425
	W,T	8-301	46	45	175 @ 1.29	1 ⁴³ / ₆₄	.0010-.0027	.0010-.0027②	.3425	.3425
	H	8-305	46	45	194 @ 1.25	1 ²³ / ₃₂	.0010-.0027	.0010-.0027	.3425-.3432	.3420-.3427
-84	2	4-151	46	45	122-180 @ 1.25	1.69	.0010-.0027	.0010-.0027①	.3418-.3425	.3418-.3425
	1,L	6-173	46	45	194 @ 1.18	1.57	.0010-.0026	.0010-.0026	.3410-.3420	.3410-.3420
	7,G,H,S	8-305	46	45	194-206 @ 1.25	1 ²³ / ₃₂	.0010-.0027	.0010-.0027	.3410-.3420	.3410-.3420
	2	4-151	46	45	170-180 @ 1.25	1.69	.0010-.0027	.0010-.0027①	.3420-.3430	.3420-.3430
-87	S	6-173	46	45	194 @ 1.18	1.57	.0010-.0026	.0010-.0026	.3410-.3420	.3410-.3420
	F,G,H	8-305	46	45	194-206 @ 1.25	1 ²³ / ₃₂	.0010-.0027	.0010-.0027	.3410-.3420	.3410-.3420

Not available

Figure given is measured at the top of the guide;

.0020-.0037 is measured at the bottom of the

guide.

Bottom exhaust: .0020-.0037

TORQUE SPECIFICATIONS

Camaro

All readings in ft. lbs.

Year	Engine VIN Code	Engine No. Cyl. Displacement (cu. in.)	Cylinder Head Bolts	Rod Bearing Bolts	Main Bearing Bolts	Crankshaft Pulley Bolts	Flywheel-to-Crankshaft Bolts	Manifold	
								Intake	Exhaust
84	2	4-151	85	32	70	160	44	29	44
84	1	6-173	70	37	69	75	50	23	25
81	K	6-229	65	45	70	60	60	30	20
81	A	6-231	80	40	100	175	60	45	25
81	J	8-267	65	45	70	60	60	30①	20
	2	4-151	92	32	70	200	44	④	④
81	L	8-350	65	45	70	60	60	30①	20
87	S	6-173	65-90	34-45	63-83	75	50	13-25	19-31
87	F,G,H	8-305	60-75	45	③	60	60	25-45	②
84	H,7,S,G	8-305	65	45	70	60	60	30①	20
87	2	4-151	92	32	70	162	55	④	④
	8	8-350	60-75	42-47	③	60	63-85	25-45	20-32

34 for T.B.I. plate bolts

①: 20-32 ft. lbs.

②: 14-26 ft. lbs.

③: 70-85 ft. lbs.

④: 60-75 ft. lbs.

text and illustration



GM "F" BODY

TORQUE SPECIFICATIONS Firebird

All readings in ft. lbs.

Year	Engine VIN Code	Engine No. Cyl. Displacement (cu. in.)	Cylinder Head Bolts	Rod Bearing Bolts	Main Bearing Bolts	Crankshaft Bolt	Flywheel to Crankshaft Bolts	Manifold	
								Intake	Exhaust
'80-'81	A	6-231	80	40	100	225	60	45	25
	S	8-265	95	30	①	160	95	35	40
	W	8-301	95	30	①	160	95	35	40
	T	8-301 Turbo	93	28	100	163	—	37	40
	H	8-305	65	45	70	60	60	30	20
'82-'84	2	4-151	85	32	70	160	44	29	44
	1,L	6-173	65-75	34-40	63-74	66-84	45-55	20-25	22-28
	7,G,H,S	8-305	65	45	70	60	60	30②	20
'85	2	4-151	92	32	70	200	44	29④	④
'85-'87	S	6-173	65-90	34-45	63-83	75	50	13-25	19-31
'85-'87	F,G,H	8-305	60-75	45	⑤	60	60	25-45	③
'86-'87	2	4-151	92	32	70	162	55	④	④

① 7/8" bolt—70; 1/2" bolt—100; rear main bearing—100.

② 20-34 for TBI plate bolts

③ Inner: 20-32 ft. lbs.

Outer: 14-26 ft. lbs.

④ See text and illustration

⑤ Inner: 70-85 ft. lbs.

⑥ Outer: 60-75 ft. lbs.

CRANKSHAFT AND CONNECTING ROD SPECIFICATIONS Camaro

All measurements are given in inches

Year	Engine VIN Code	Engine No. Cyl. Displacement (cu. in.)	Crankshaft				Connecting Rod		
			Main Brg Journal Dia.	Main Brg Oil Clearance	Shaft End-Play	Thrust on No.	Journal Diameter	Oil Clearance	Side Clearance
'80-'81	K	6-229	①	②	.0020-.0060	4	2.0986-2.0998	.0013-.0035	.0060-.0140
	A	6-231	2.4995	.0004-.0015	.0040-.0080	2	2.2495-2.2487	.0005-.0026	.0060-.0270
	J	8-267	①	②	.0020-.0060	5	2.0986-2.0998	.0013-.0035	.0060-.0140
	H	8-305	①	②	.0020-.0060	5	2.0986-2.0998	.0013-.0035	.0060-.0140
	L	8-350	①	②	.0020-.0060	5	2.0986-2.0998	.0013-.0035	.0060-.0140
'82-'84	2	4-151	2.300	.0005-.0022	.0035-.0085	5	2.000	.0005-.0026	.0060-.0220
	1	6-173	2.493-2.494	.0017-.0029	.0019-.0066	3	1.998-1.999	.0014-.0035	.0060-.0170
	H,7,S,G	8-305	①	②	.0020-.0060	5	2.098-2.099	.0018-.0039	.0080-.0140
'85-'87	2	4-151	2.300	.0005-.0022	.0035-.0085	5	2.000	.0005-.0026	.0060-.0220
	S	6-173	2.647-2.648	.0016-.0032	.0019-.0067	3	1.998-1.999	.0014-.0035	.0060-.0170
	F,G,H	8-305	①	②	.0020-.0060	5	2.098-2.099	.0018-.0039	.0080-.0140
'87	8	8-350	①	②	.0020-.0060	5	2.098-2.099	.0018-.0039	.0080-.0140

① No. 1—2.4484-2.4493

Nos. 2, 3, 4—2.4481-2.4490

No. 5—2.4479-2.4488

② No. 1—0.0008-0.0020

Nos. 2, 3, 4—0.0011-0.0023

No. 5—0.0017-0.0032

CRANKSHAFT AND CONNECTING ROD SPECIFICATIONS Firebird

All measurements are given in inches

Year	Engine VIN Code	Engine Displacement (cu. in.)	Crankshaft				Connecting Rod		
			Main Brg. Journal Dia.	Main Brg. Oil Clearance	Shaft End-Play	Thrust on No.	Journal Diameter	Oil Clearance	Side Clearance
'80-'81	A	6-231	2.499	.0003-.0018	.0030-.0090	2	2.000	.0005-.0026	.0060-.0230
	S	8-265	3.000	.0002-.0018	.0030-.0090	4	2.250	.0005-.0025	.0060-.0220①
	W,T	8-301	3.000	.0002-.0018	.0030-.0090	4	2.250	.0005-.0025	.0060-.0220①



CRANKSHAFT AND CONNECTING ROD SPECIFICATIONS

Firebird

All measurements are given in inches

Year	Engine VIN Code	Engine Displacement (cu. in.)	Crankshaft				Connecting Rod		
			Main Brg. Journal Dia.	Main Brg. Oil Clearance	Shaft End-Play	Thrust on No.	Journal Diameter	Oil Clearance	Side Clearance
'80-'81	H	8-305	④	②	.0020-.0060	5	2.098-2.099	.0030	.0060-.0140
'82-'84	2	4-151	2.300	.0005-.0022	.0035-.0085	5	2.000	.0005-.0026	.0060-.0220
	1,L	6-173	2.493-2.494	.0017-.0029	.0019-.0066	3	1.998-1.999	.0014-.0035	.0060-.0170
	7,G,H,S	8-305	④	③	.0020-.0060	5	2.098-2.099	.0018-.0039	.0080-.0140
'85-'87	2	4-151	2.300	.0005-.0022	.0035-.0085	5	2.000	.0005-.0026	.0060-.0220
	S	6-173	2.647-2.648	.0016-.0032	.0019-.0067	3	1.998-1.999	.0014-.0035	.0060-.0170
	F,G,H	8-305	④	③	.0020-.0060	5	2.098-2.099	.0018-.0039	.0080-.0140

① Total for two connecting rods

② No. 1: .001-.0015

No.'s 2, 3, 4: .001-.0025

No. 5: .0025-.0035

③ No. 1: .0008-.0020

No.'s 2, 3, 4: .0011-.0023

No. 5: .0017-.0033

④ No. 1: 2.4484-2.4493

No.'s 2, 3, 4: 2.4481-2.4490

No. 5: 2.4479-2.4488

CAMSHAFT SPECIFICATIONS

Camaro

All measurements in inches. To convert inches to metric units, refer to Metric Information section.

Year	Engine VIN Code	Engine Type/Disp. L(cu in.)	Journal Diameter					Lobe Lift		Camshaft End Play
			1	2	3	4	5	Intake	Exhaust	
'80-'81	K	3.8(6-229)	All 1.8682-1.8692					0.3570	0.3900	0.004-0.012
	A	3.8(6-231)	All 1.7850-1.7860					—	—	—
	J	4.4(8-267)	All 1.8682-1.8692					0.3570	0.3900	0.004-0.012
	H	5.0(8-305)	All 1.8682-1.8692					0.2484	0.2667	0.004-0.012
	L	5.7(8-350)	All 1.8682-1.8692					0.2600	0.2733	0.004-0.012
'82	2	2.5(4-151)	All 1.8690					0.3980	0.3980	0.0015-0.0050
	1	2.8(6-173)	All 1.8976-1.8996					0.2350	0.2660	—
	H	5.0(8-305)	All 1.8682-1.8692					0.2380	0.2600	0.004-0.012
	7	5.0(8-305)	All 1.8682-1.8692					0.2600	0.2730	0.004-0.012
'83	2	2.5(4-151)	All 1.8690					0.3980	0.3980	0.0015-0.0050
	1	2.8(6-173)	All 1.8976-1.8996					0.2350	0.2660	—
	H	5.0(8-305)	All 1.8682-1.8692					0.2340	0.2570	0.004-0.012
	G	5.0(8-305)	All 1.8682-1.8692					0.2690	0.2760	0.004-0.012
	S	5.0(8-305)	All 1.8682-1.8692					0.2570	0.2690	0.004-0.012
'84	2	2.5(4-151)	All 1.8690					0.3980	0.3980	0.0015-0.0050
	1	2.8(6-173)	All 1.8976-1.8996					0.2350	0.2660	—
	H	5.0(8-305)	All 1.8682-1.8692					0.2340	0.2570	0.004-0.012
'85-'87	2	2.5(4-151)	All 1.8690					0.3980	0.3980	0.0015-0.0050
	S	2.8(6-173)	All 1.8976-1.8996					0.2625	0.2732	—
	H	5.0(8-305)	All 1.8682-1.8692					0.2340	0.2570	0.004-0.012
	F,G	5.0(8-305)	All 1.8682-1.8692					0.2690	0.2760	0.004-0.012
	8	5.7(8-350)	All 1.8682-1.8692					0.273	0.282	.0040-.0120

— Not available



GM "F" BODY

CAMSHAFT SPECIFICATIONS Firebird

All measurements in inches. To convert inches to metric units, refer to Metric Information section.

Year	Engine VIN Code	Engine Type/Disp. L(cu in.)	Journal Diameter					Lobe Lift		Camshaft End Play
			1	2	3	4	5	Intake	Exhaust	
'80-'81	A	3.8(6-231)			All 1.7850-1.7860			—	—	—
	S	4.3(8-265)			All 1.9000			—	—	—
	W,T	4.9(8-301)			All 1.9000			—	—	—
	H	5.0(8-305)			All 1.8682-1.8692			0.2484	0.2667	0.004-0.012
'82	2	2.5(4-151)			All 1.8690			0.3980	0.3980	0.0015-0.0050
	1,L	2.8(6-173)			All 1.8976-1.8996			0.2350	0.2660	—
	H	5.0(8-305)			All 1.8682-1.8692			0.2380	0.2600	0.004-0.012
	7	5.0(8-305)			All 1.8682-1.8692			0.2600	0.2730	0.004-0.012
'83	2	2.5(4-151)			All 1.8690			0.3980	0.3980	0.0015-0.0050
	1,L	2.8(6-173)			All 1.8976-1.8996			0.2350	0.2660	—
	H	5.0(8-305)			All 1.8682-1.8692			0.2340	0.2570	0.004-0.012
	G	5.0(8-305)			All 1.8682-1.8692			0.2690	0.2760	0.004-0.012
	S	5.0(8-305)			All 1.8682-1.8692			0.2570	0.2690	0.004-0.012
'84	2	2.5(4-151)			All 1.8690			0.3980	0.3980	0.0015-0.0050
	1,L	2.8(6-173)			All 1.8976-1.8996			0.2350	0.2660	—
	H	5.0(8-305)			All 1.8682-1.8692			0.2340	0.2570	0.004-0.012
	G	5.0(8-305)			All 1.862-1.8692			0.2690	0.2760	0.004-0.012
'85-'87	2	2.5(4-151)			All 1.8690			0.3980	0.3980	0.0015-0.0050
	S	2.8(6-173)			All 1.8976-1.8996			0.2625	0.2732	—
	H	5.0(8-305)			All 1.8682-1.8692			0.2340	0.2570	0.004-0.012
	F,G	5.0(8-305)			All 1.8682-1.8692			0.2690	0.2760	0.004-0.012

— Not available

RING SPECIFICATIONS Camaro

All measurements are given in inches

Year	Engine VIN Code	Engine No. of Cyl. Displacement (cu. in.)	Ring Gap			Ring Side Clearance		
			Top Compression	Bottom Compression	Oil Control	Top Compression	Bottom Compression	Oil Control
'82-'87	2	4-151	.0100-	.0100-	.0150-	.0015-	.0015-	.0010-
			.0220	.0270	.0550	.0030	.0030	.0050
'82-'84	1	6-173	.0098-	.0098-	.0020-	.0011-	.0015-	.0078
			.0196	.0196	.0550	.0027	.0037	max.
'80-'81	K	6-229	.0100-	.0100-	.0150-	.0012-	.0012-	.0020-
			.0200	.0250	.0550	.0032	.0032	.0070
'80-'81	A	6-231	.0100-	.0100-	.0150-	.0030-	.0030-	.0035
			.0200	.0200	.0350	.0050	.0050	max.
'80-'81	J	8-267	.0100-	.0100-	.0150-	.0012-	.0012-	.0020-
			.0200	.0250	.0550	.0032	.0032	.0070
'80-'81	L	8-350	.0100-	.0100-	.0150-	.0012-	.0012-	.0020-
			.0200	.0250	.0550	.0032	.0032	.0070
'80-'87	G	8-305	.0100-	.0100-	.0150-	.0012-	.0012-	.0020-
			.0200	.0250	.0550	.0032	.0032	.0070
'85-'87	S	6-173	.0098-	.0098-	.0020-	.0011-	.0015-	.0078
			.0196	.0196	.0550	.0027	.0037	max.